

## **SSOW – Maintenance and repair internal combustion, electric, mains or generator powered materials handling and plant equipment.**

---

<b>Written by:</b>	Vic Hargreaves (Regional SHEQ Advisor).
<b>Scope of Activity:</b>	This Safe System of Work covers the general maintenance and repair of internal combustion, electric, mains or generator powered materials handling or plant equipment at customer locations throughout the UK and Republic of Ireland.
<b>Applicable Risk Assessment:</b>	RA 001 - Maintenance and repair internal combustion, electric, mains or generator powered materials handling and plant equipment.
<b>Hazards Expected:</b>	As identified in the applicable risk assessment.
<b>Mandatory PPE:</b>	Overalls Safety boots Nitrile gloves Safety glasses High visibility clothing (vest as minimum)
<b>Additional PPE (as required):</b>	Hearing protection Rigger gloves (handling heavy components) Bump cap (if working in area/ position with poor head clearance) Hard hat (as identified by site requirements/ required by task) Dust mask (in areas where dust is present. Consult site contact on requirement) Chemical grade full face visor (when working with battery acid) Acid resistant rubber apron (when working with battery acid) Acid resistant rubber gauntlet gloves (when working with battery acid) Waterproof jacket and trousers (when working in wet conditions) Neoprene Gloves (when working on LPG fuel systems)
<b>Resources:</b>	Competent engineer (s) Service vehicle Hand tools Power tools (within current PAT test) Measuring tools (within current Calibration test) Lifting equipment (within current Thorough Examination) Barrier tape (as required) First aid kit Fire extinguisher Spill kit

### **Manning:**

Field service engineer(s) reporting to an Engineering Manager who is responsible for providing information, instruction, supervision and ensuring that the engineers are suitably trained. In turn the Engineering Manager reports to the Senior / Regional Business Manager who in turn reports to the Regional Engineering Director.

Engineers will take full responsibility for:

- Customer contact, authority to carry out the task, signing and implementing customer work permits and following customer site rules;
- Establishing with the customer and working in a safe area and environment;

## **SSOW – Maintenance and repair internal combustion, electric, mains or generator powered materials handling and plant equipment.**

---

- c) Ensuring that a risk assessment is in place, is suitable and sufficiently covers all hazards;
- d) Familiarising themselves with the equipment operator and maintenance manuals;
- e) Ensuring all maintenance and repairs are completed in accordance with the manufacturer's manual.

### **Safe Working Method:**

- Upon arriving on site, you must sign in at security entrance and/ reception area and make contact with the appropriate customer site contact;
- Ensure that any necessary inductions, permits-to-work or similar have been completed and are in date;
- Establish what first aid arrangements are available on site and the steps to take in the event of a fire;
- Establish with the customer if there are any particular hazards you need to be aware of and what PPE will be required in the work area;
- In conjunction with the customer you must then agree a suitable work area, ensuring:
  - There is sufficient space to remove/ replace parts and carry out all tasks required;
  - The area is safe and free from any hazards (work with customer to eliminate any hazards, if you are unhappy with the area in any way contact line manager before proceeding);
  - The area is suitably separate from customer employees/ activities (create a cordoned area where required);
  - The ground is firm, level and of suitable load bearing capacity for the equipment/ task;
  - The area is not in close proximity to a drain or underground/ overhead services (e.g. gas, electricity);
  - There are fire exits available nearby;
- If you are in a lone working situation, ensure you follow the companies lone working procedures;
- You must position your service vehicles in close proximity to the work area in order to limit the need to carry tools, parts or equipment over unnecessary distances;
- Isolate equipment following manufacturer's instructions, ensuring as a minimum:
  - For IC Powered Equipment – Key switch is isolated, keys removed and kept on engineer's person and battery is disconnected;
  - For Battery Powered Equipment – Key switch is isolated, keys removed and kept on engineer's person, battery is disconnected, and all components are suitably discharged;
  - For Mains Powered Equipment – Key switch is isolated, mains power to machine is isolated and locked off by a competent person with the necessary electrical qualifications and competent person must also check all components are fully discharged before work begins;
  - For Generator Powered Equipment – Key switch isolated, generator isolated and locked off by trained engineer, check all components are fully discharged before work begins.
  - For working on or under a raised Mast/carriage – Where possible remove the lift forks. Ensure 2 safety chains are used to secure the mast correctly 1<sup>st</sup> chain to secure the channel to crossmember to prevent channel from movement and the 2<sup>nd</sup> chain to secure carriage to crossmember to prevent movement, see picture and diagram at the end of page 4 of this Safe System of Work, entitled, **Safe Mast/carriage chaining Method**.

## **SSOW – Maintenance and repair internal combustion, electric, mains or generator powered materials handling and plant equipment.**

---

- Ensure any automatic start systems are disabled;
- Ensure a do-not-use tag is fitted to the equipment in a prominent place and is not removed until work is finished;
- Ensure all parts and components have come to a standstill and have sufficiently cooled before starting;
- Relieve pressure from any pressurised systems;
- If work is required on LPG systems, the following steps should be taken beforehand:
  - Ensure the equipment is in a suitable location that is free from any drains, pits or other areas below ground level where LPG (heavier than air) that has escaped could gather;
  - Ensure there is no sources of heat or ignition in the area that could ignite escaped LPG;
  - Ensure you have all the correct PPE on to protect against LPG, including Neoprene gloves, goggles, overalls and safety boots;
  - With the engine running, close the valves on the LPG bottle(s) and allow the equipment to run out of fuel;
  - Isolate the equipment electrically in the normal way;
  - Disconnect the couplings on the LPG bottles, turning them slowly and remaining alert for any leakage;
  - Disconnect any other components slowly whilst remaining alert for any leakage;
  - Ensure all components are fully reconnected and tightened before turning opening the valves on the LPG bottles;
  - Test for leaks around any areas where components were disconnected or connected.
- Complete necessary maintenance and repairs in conjunction with training and following manufacturer's maintenance manual;
- If any part of the task involves any of the following high-risk activities, ensure the specific risk assessment and safe system of work are followed:
  - Working at height;
  - Use of oxygen acetylene equipment;
  - Use of ARC or MIG welders;
  - Use of bench or angle grinders;
  - Lifting operations;
  - Recovering immobilised equipment;
  - Working at the roadside;
  - Work on or near water;
  - Removal or fitting masts on materials handling equipment;
  - Work in cold stores;
  - Inflating and deflating of pneumatic tyres
- If the task requires you to undertake any other high-risk activity other than the abovementioned you must contact your line manager before proceeding;
- If any accidents, incidents or near misses occur ensure you contact and inform your line manager and the customer contact immediately;
- Ensure you take note of any Safety Gains noticed and highlight them via the Safety Gain process. If the Safety Gain relates to the customer or their activities, ensure you make them aware it before leaving site;

## **SSOW – Maintenance and repair internal combustion, electric, mains or generator powered materials handling and plant equipment.**

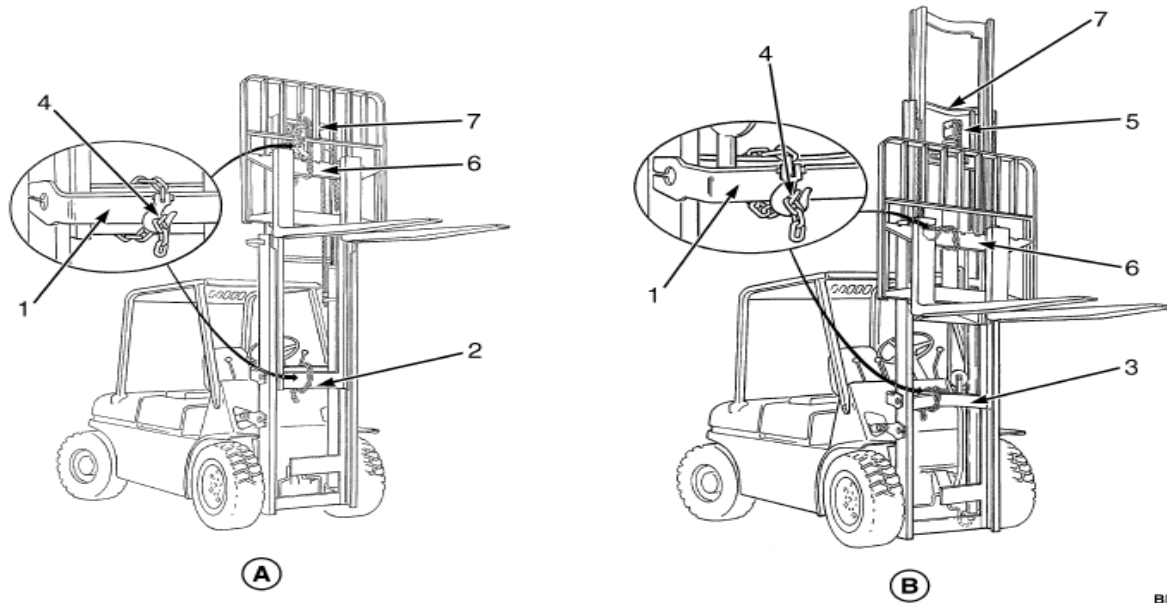
---

- If a spillage occurs stop the spill at source, prevent it from spreading using spill booms and absorb the liquid using spill pads, granules or similar. If spillage occurs near drain ensure a drain cover is put in place if available or protect the drain with spill booms. For larger spills call for assistance from customer. Once spill has been attended to ensure you contact and inform your line manager and the customer contact;
- All waste generated during task must be segregated into suitable containers and disposed of in a Forkway approved waste station;
- Once work is complete ensure an operational test is completed to ensure all parts of equipment, including any safety devices, are working as they should. Ensure equipment is in neutral with park brakes applied before attempting to start.
- Once finished complete job sheet and associated *paperwork*;
- Complete a final check of the work area to ensure no residues, waste, parts or tools etc. have been left behind;
- Take job sheet to the customer and have it signed. Ensure you make the status of the equipment clear to the customer when getting the job sheet signed;
- Close of any permits-to-work or similar, sign out at security entrance and/ reception area as necessary and leave via the designated exit.

### **Safe Mast/carriage chaining Method:**

- Apply the park brake, and raise the mast to a position where the cross members of the inner channels align with a cross member of the outer channel that cannot move;
- Isolate the equipment and remove the key;
- Secure a suitable endless chain around the cross members to prevent further movement;
- Fit another endless chain around the carriage and cross member to prevent movement of the carriage.

**SSOW – Maintenance and repair internal combustion, electric, mains or generator powered materials handling and plant equipment.**



BM1